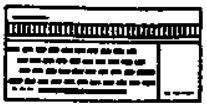



LIST

LONG ISLAND SINCLAIR TIMEX GROUP
INCORPORATING * NYTSE OF NEW YORK CITY
ISSUE: December 1989

DISK DRIVES SUPPORTED:
1 OLIGER
2 LARKEN
3 AERCO

LIST MEMBERSHIP IS $15.00. LIBRARY TAPES ARE AVALIABLE, WRITE THE ADDRESS PRINTED BELOW.


SEASON'S GREETINGS

JANUARY 14, 1990
LONG ISLAND SINCLAIR
USERS GROUP SWAP MEET !!!


L.I.S.T.
5 PERI LANE
VALLEY STREEM, NY
11581

TO:

FIRST CLASS MAIL
DATED MEETING NOTICE

UPPER RIGHT CORNER OF YOUR LABEL IS DATE OF LAST ISSUE.

LISTing

LIST OFFICERS

PRES.	HARVEY RAIT
TRES.	ROBERT MALLOY
REC.SEC.	STEVE KAYE
EDITOR.	FRED STERN
LIBR.	TOM SKAPINSKI

PLEASE SEND INQUIRIES TO:
LIST
MR. HARVEY RAIT
5 PERI LANE
VALLEY STREAM, N.Y. 11581

PLEASE SEND SUBMISSIONS TO:
LIST
MR. FRED STERN
214 ROBERT ST.
HOLBROOK, N.Y. 11741

COMING EVENTS:

JAN. 14, 1990 LIST SWAP MEET AND AUCTION
JAN. 15. 1990 NYTSE MEETING

NYTSE

NYTSE MEETS THE DAY AFTER THE LIST MEETING.
7:30 PM.
MISS KIMS
PARK AVENUE SOUTH
BETWEEN 21ST. AND 22ST.

MEETING MINUTES
DEC. 12, 1989

THE MEETING WAS CALLED TO ORDER AT 2:15 BY HARVEY

FRED TOLD OF HIS TRIP TO TROY N.Y. TO PICK-UP THE EQUIPMENT FROM HAL BELLINSON.

STONEY TOLD OF HIS TRIP TO MANHATTEN TO PICK-UPEQUIPMENT DONATED TO LIST.

A REVIEW WAS MADE OF THE EQUIPMENT WHICH WILL BE AUCTIONED AT THE JAN. 14,1990 MEETING.

A LIST OF THE EQUIPMENT TO BE AUCTIONED CAN BE FOUND ON PAGES 4-6 OF THIS EDITION OF LISTING.

ADMISSION FOR THIS EVENT IS;
$1.00 FOR MEMBERS
$6.00 FOR NON-MEMBERS

NON-MEMBERS WHO JOIN LIST DURING THIS MEETING WILL HAVE THE $6.00 ADMISSION CREDITED TOWARDS THE DUES. OR IN OTHER WORDS, WILL BE ADMITTED FREE.

OTHER BUSINESS

BOB GILDER HAS RECEIVED HIS QL SCANNER. AN UP COMING ARTICLE FOR LISTING WILL BE EXPECTED.

JOHN PAZMINO TOLD US OF TWO BOOKS WITH INFORMATION ADAPTABLE TO THE TS 2068 AND QL. SUPERCHARGED GRAPHICS HIGH PERFORMANCE INTERACTIVE GRAPHICS ARE THE TITTLES TO LOOK FOR; JOHN IS INVITED TO SEND IN AN ARTICLE.

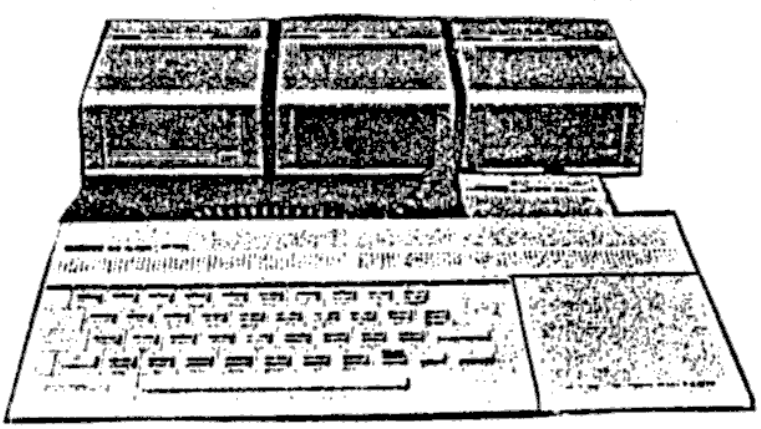
ZX-81,TS1000 TECHNICAL TIDBITS IS ON SALE THROUGH LIST FOR $4.00. PURCHASE YOUR COPY AT THE NEXT MEETING OR BY MAIL.

CLASSIFIEDS

THIS CLASSIFIED SECTION IS AVAILABLE TO ALL LIST MEMBERS FREE OF CHARGE.
THE ONLY RESTRICTION IS THAT IT IS TO BE USED ONLY FOR THE SEEKING, SELLING OR SWAPPING OF SINCLAIR, TIMEX OR MICROACE COMPUTER EQUIPMENT, PERIPHERALS AND SOFTWARE.
LISTING, LIST, AND ITS OFFICERS DO NOT ENDORSE, WARRANTY, OR GUARANTEE ANY OF THE ITEMS LISTED IN THIS CLASSIFIED SECTION

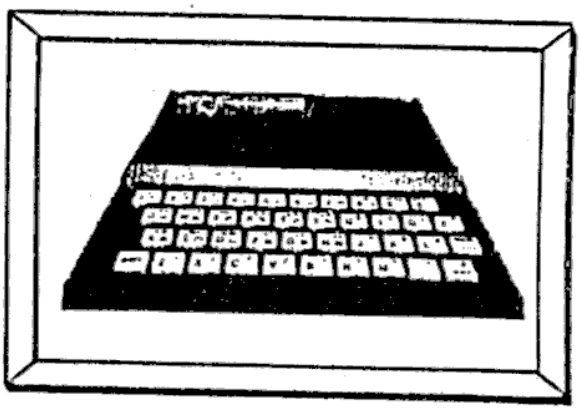
A FINAL WORD

MY NAME IS FRED STERN, AND I AM THE EDITOR OF THIS EDITON OF LISTING.
MY WORDS WILL BE BRIEF FOR A CHANGE.
ON BEHALF OF THE OFFICERS OF LIST AND THE STAFF OF LISTING:
HAPPY HOLIDAY
HAPPY AND HEALTHY NEW YEAR
SEE YOU ALL IN 1990.



TIMEX sinclair 1000

Long Island Sinclair-Timex Group



ZX81 & T/S 1000

TECHNICAL

TIDBITS

TS1000 TECHNICAL TIDBITS
IS READY FOR SALE.
SEND A $4.00 CHECK PAYABLE TO
LIST AND A NOTE WITH YOUR NAME
AND ADDRESS TO:
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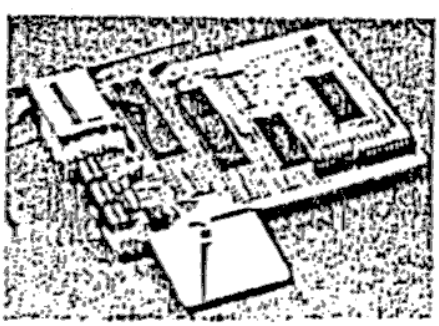
5 PERI LANE
VALLEY STREAM, N.Y. 11581



Price $4.00

January 14,1990
Long Island Sinclair Timex U.G
AUCTION - SWAP MEET

TS 2068 SALE

HARDWARE

TS 2068 Computer, new .....
with Manual, power supply, TV cable, Tutorial tape.

TS 2068 Computer .....
with Manual (copy), Quick Guide, Tutorial tape. Mounted in cabinet which encloses peripheral interfaces, etc., and provides a platform for Monitor.

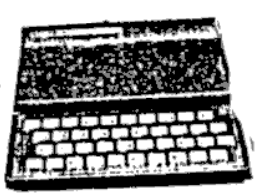
TS 2020 Tape Recorder.....
with cables, manual.

FDD (Zebra) Disk Drives .....
Two drives, power supply, CP/M controller, in cabinet with cooling fan. With interface, Users Manual, User's Guide to CP/M, CP/M Command Summary, Technical Manual, complete set of FDD Express, Zebra Bonus Disk (Mscript, Techdraw, Zmail), CP/M Master Disk.

Printer, Epson LX 80 Dot Matrix.....
With User's Manual, 4 ribbons, Tasman B/C Interface, software (on tapes), and documents for Tasman and Woods' drivers.

Monitor, RGB Color, Magnavox 80, Model CM8562.....
With interface, operation guide, service manual.

Monitor, Amber Monochrome, Zenith.....
Connects directly, without interface.



****
*TS1000+ZX81+TS1000+ZX81+TS1000
TS1000 EXCELLENT CONDITION
TS1912 16K RAM PACKS
****

****
*TS1000+ZX81+TS1000+ZX81+TS1000
TS1000 EXCELLENT CONDITION
TS1912 16K RAM PACKS
****

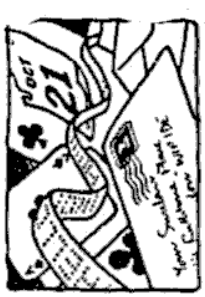
BOOKS

Timex 2068 Technical Manual.....
by Corcoran & Branigin, Timex Corporation
plus 24"x32" Circuit Diagram.
TS2068 ROM Disassembly & EPROM Programmer Manual...
by Bob Orrfelt, Gesso Products, pp 101
TS2068 Intermediate/Advanced Guide.....
by Jeff Mazur, Sams, pp 232
TS2068 Explored.....
by Tim Hartnell,Wiley Press, pp 182
TS2068 Basics and Beyond.....
by Sharon Aker, Scott Foresman, pp 227
Inside the TS2000 Computer.....
by Jeff Naylor & Diane Rogers,
Sunshine Press, pp 114
Tantalizing Games for the TS2000 Series.....
by Renko & Edwards, Addison-Wesly, pp 136
Powerful Projects with Your TS.....
by Jim Stephens, Scott Foresman, pp 228
Computer Peripherals You Can Build.....
by Gordon Wolfe, Tab Books, pp 258

Spectrum ROM Disassembly.....
by Logan & O'Hara, Melbourne House, pp236
Spectrum Interfacing & Projects.....
by Graham Bishop, McGraw-Hill, pp 139

CP/M Handbook, by Rodnay Zaks .....
Sybex, pp 320
CP/M Primer, by Murtha & Waite.....
Sams, pp 150
Soul of CP/M, by Waite & Lafore.....
Sams, pp 391

Z80 Instruction Handbook, by Nat Wadsworth.....
Hayden Book, pp 117
Z80 Microcomputer Handbook, by William Barden....
Sams, pp 304
Z80 Users Manual, by Joseph Carr.....
Prentice-Hall, pp 326
Programming the Z80, by Rodnay Zaks.....
Sybex, pp 624
Z80 Applications, by Coffron .....
Sybex, pp 295
Z80 Gourmet Guide & Cookbook.....
Hayden Book, pp 322
Z80 Assembly Language Subroutines.....
by Leventhal & Saville,
Osborne/McGraw-Hill, pp 493



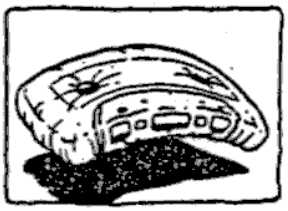
RS-232 Made Easy by Martin Seyer.....
Prentice-Hall, pp 213

SOFTWARE

All with original documentation.

Flight Simulator (Timex) on cartridge.....
OS-64 Ver 1.72 (Zebra) on cartridge.....
* PRO/FILE 2068 on tape.....
Mscript V5Z3 on disk.....
Mscript on tape.....
* Hot-Z V1.8 & V1.9 on tape.....
Hot-Z V2.5 on tape.....
Hot-Z Labels on tape.....
* DLAN Display Language on tape.....
Timachine on tape.....
Zeus Z80 Assembler on tape.....
Zeus Monitor/Disassemble on tape.....
Vu-Calc (Timex) on tape.....
Vu-File (Timex) on tape.....
Horace Goes Skiing (Timex) on tape.....
Horace and the Spiders (Timex) on tape.....

* Also on Disk.

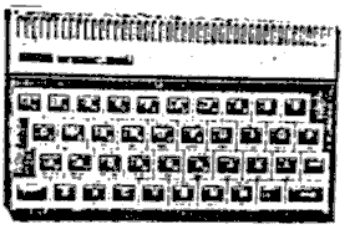


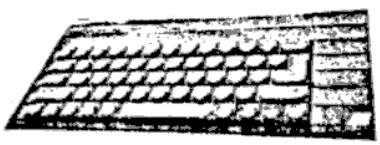
STORAGE MEDIA

Disks, new.....	16	.....at $1.00 each
Disks, used.....	25	.....at $0.50 each
10 minute tapes, used...	34	.....at $0.10 each

Disk Drive Cleaner, with fluid $4.00

BEST BUYS BEST BUYS





BUY SELL SWAP at Harvey's House! 2PM!!

Get $ or Save $!

NOTE; The information in this article is believed to be correct, but the LIST group and author take no responsibility for any damage incurred by the experimenter using this information.

ALTERNATE MODEM POWER SUPPLIES

Like many other TIMEX enthusiasts I recently purchased a surplus 2050 modem board. While the modem worked fine, I did not like the extra tangle of cables it created on my desk. It was only a short time before I figured out how to run the modem without an extra wall transformer by obtaining a 9 volt supply from my 2068. If you are using a modem and don't have a socket for the extra power supply, or you just don't like the extra cable, this article shows how to run the 2050 modem with any TIMEX computer without using an extra power supply.

Before I describe any changes to the modem board, a short description of the original power supply would be helpful. There are 12 integrated circuits on the modem board, 11 of which are powered by the computer's 5 volt supply obtained from the computers rear edge connector. The remaining chip, a LM-1458 op-amp is the only one that uses 9 volts. The other two components that are connected to the 9 volt supply are the relay used to dial the number you are calling, and the carrier detect LED (Light Emitting Diode).These three components draw a negligible amount of power, in fact, the relay only draws power in short "bursts" when the modem is dialing. This low 9 volt consumption makes it easy to find an alternate power supply for the modem.

The easiest way to obtain the 9 volts is from a battery. The "transistor radio" type is fine, and will power your modem for many hours of "connect time". But, batteries do go dead, and usually at the most inconvenient times. If you decide to use a battery, keep a spare handy to replace the original when it loses power. All you need to connect a battery to the modem is a" 9-volt battery snap", available from Radio Shack, a small soldering iron, and a bit of rosin core solder. See FIGURE ONE for details on where to solder the connector. If you don't want to solder anything to your modem board, the battery snap can be soldered to a 1/8" mini phone plug, also available from Radio Shack. Connect the red wire of the battery snap to the tip terminal of the plug, and the black wire to the body, or side terminal. The battery adaptor can then be plugged into the power socket on the back of the modem. You can reduce your modem's 9 volt consumption by running the carrier detect LED off the 5 volt supply. This involves cutting one lead of the LED, adding a jumper wire, and adding a 500 ohm 1/4 watt resistor to the modem board. See FIGURE TWO for details. If you do run the modem off a battery, just remember to disconnect it when not in use. If left connected, the battery will go dead over night.

If you use a ZX/81, TS-1000, TS-1500 or SINCLAIR Spectrum you can obtain 9 volts for the modem from the edge connector of the computer. Only two jumper wires are needed to make this modification. See FIGURE THREE for details on where to connect the jumpers on the modem and the adaptor board the plugs onto the

computers edge connector. If you make this modification, remove or "plug" the power connector on the back of the modem board so another power supply can't be plugged in.

TS-2068 owners do not have things so easy, there is no connection to the edge connector pin that supplies 9 volts on the other TIMEX models. There isn't even a suitable supply to tap inside the computer. All is not lost though, the narrow ZX/81 sized edge connector can be cut off the adaptor board, the remaining pins removed with a hot soldering iron, and a larger 2068 sized connector soldered on. (Available from Zebra Systems, address at the end of the article.) The 15 volt supply that powers the computer can then be tapped off one of the pins that was not on the small connector. The Zebra Systems connector has all the pins numbered an labeled, but if you are using another connector, see FIGURE FOUR for pin locations and names. Once the 15 volts is available on the new connector, a voltage regulator will have to be used to supply the necessary voltage for the modems operation. A 7809 voltage regulator (9 volts) can supply all of the power needed for the modem, unfortunately, it is nearly impossible to find. Two alternatives are left, use another voltage regulator, or run the modem off a different voltage.. It just so happens that most 9 volt wall transformers, at low current draw, produce about 13 volts. Since the modem uses very little power, it actually runs off the 12-13 volts supplied by the "9 volt" adaptor. Measure the voltage yourself and see. Radio Shack does sell a 7812 voltage regulator (12 volts) that can be used to power the modem. Details of its connection are in FIGURE FIVE. If you have a 5 volt regulator handy (7805) it can be tricked into producing 9 volts by the addition of two resistors to the circuit. See FIGURE SIX for details. Either regulator will work fine, use the one of your choice. Mount the regulator on a small heat sink and attach it to an empty spot on the modem board with epoxy or double sided foam tape, making sure the heat sink and regulator pins are not touching any components on the board. Once again, remove or plug the modem's power socket.

If you have any electronics construction experience, you will find these modifications easy. I will, however, offer a few words of advice to the novice "hardware hacker". Use a small (25 watt or less) soldering iron and rosin core solder. DO NOT use acid core solder or brush on flux. The jumper wires do not have to be thick, "telephone" wire will work fine. And please check all the modifications twice before plugging anything in.

John Bell

LISTing

BULLETTIN BOARDS

NEXT ISSUE NEXT ISSUE

VIEW OF THE BOTTOM OR SOLDER SIDE OF THE MODEM BOARD.

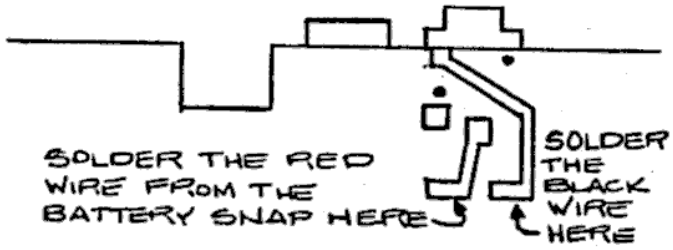


FIGURE ONE

TOP OR COMPONENT SIDE

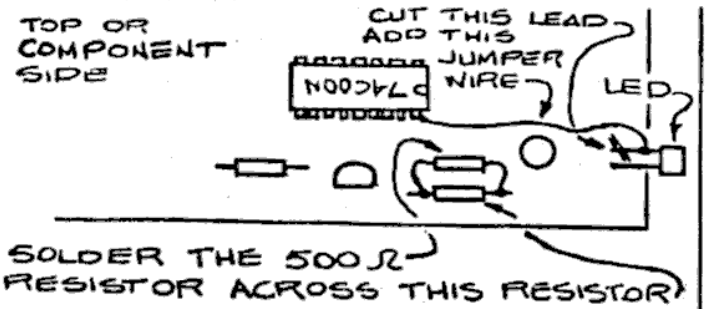
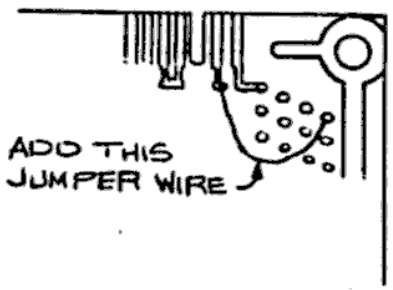


FIGURE TWO

VIEW OF THE BOTTOM OF THE SMALL ADAPTOR BOARD



VIEW OF THE BOTTOM OF THE MODEM BOARD

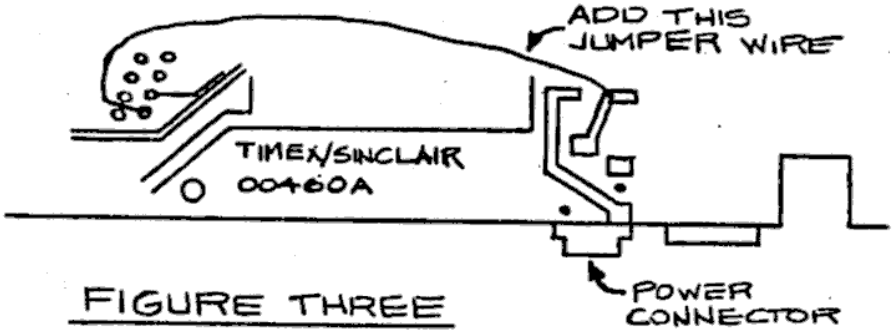


FIGURE THREE

TOP OF CONNECTOR

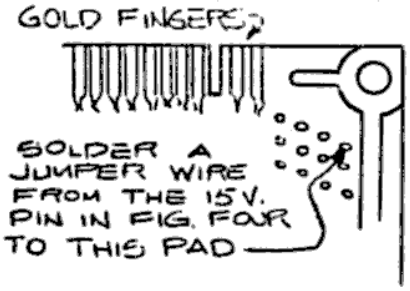
GND	EAR	A13	D7	D21	SLOT	D0	D1	D2	D6	D5	D3	D4	INT	NMI	HALT	MR	IO	RFS	WR	BUSA	NAT	BUSR	RES	M1	RFS	EAR	ROM	BE	10A5	GND	GND
GND	TAPE	+15	+5	NC	SLOT	GND	GND	CLK	A0	A1	A2	A3	A5B	A4B	A8B	A2	A11	A10	A9	A6	A7	A6	A5	NC	A4	R	G	B	BUS	VID	GND

15 VOLTS HERE

BOTTOM OF CONNECTOR

FIGURE FOUR NOTE! SOME NAMES ABBREVIATED

BOTTOM OF ADAPTOR BOARD



BOTTOM VIEW OF MODEM BOARD BUT TOP OF REGULATOR

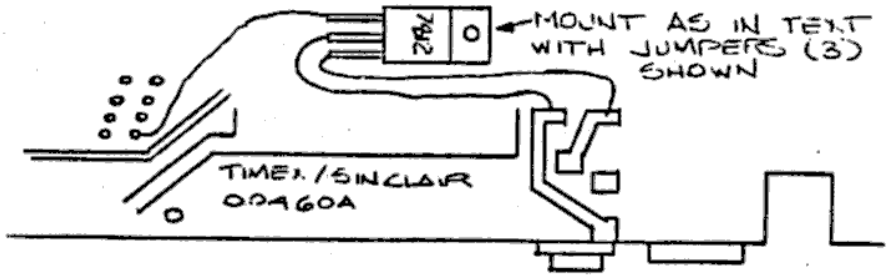


FIGURE FIVE

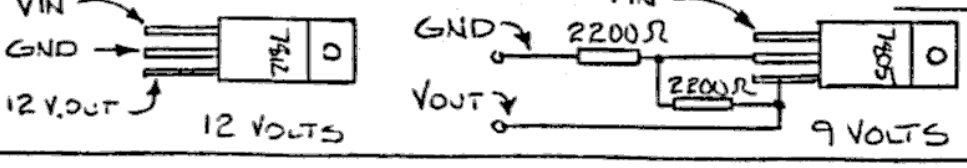


FIGURE SIX

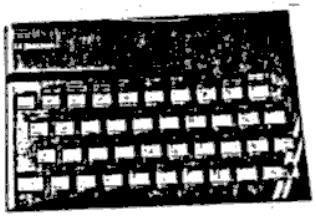
ADD 2 RESISTORS TO 7805 AND REPLACE 7812 IN FIG. FIVE

Timex Computer

From CTS

P.C. Cothran

Sinclair Timex TS-1000
Kitchen Table Math Series



I admit it was tempting to say "No more on that machine, the designer and originator dropped it, why shouldn't I?" But, I have invested my money and time for a year into that TS-1000 with 16K add-on RAM, plus a printer and TV, so "WHY NOT CONTINUE?" See, Chet?

I am also reasonably sure that the owners (all four million of them) can use help, just as I need help with both of my machines.

The program below is designed to show the very good accuracy of the TS-1000 by using three separate routines. They are in the "Menu", and require little explanation. The "Square Root" routine asks for a lower and upper limit, from the user. The machine scrolls through these limits; two things that are different. One: I derived a difference figure by multiplying the square root time itself, then subtracted the original digit to see the "difference", and recorded it. With 6-byte floating point decimal language, it is slow, yes. BUT, has higher accuracy than machines costing multiples of its low purchase price.

In the trig routine, conversion is made to radians measure, then sine and cosine extracted. The formula given is from my trig book, available also in any encyclopedia.

Logarithm tend to buffalo kids in school, I thought it would be of interest to include a segment on natural and decimal logs, so I did. Hope that it is informative and interesting.

Again, the copy out of the thermal printer is 'light', so I passed this copy through my Epson printer the hard way - entered the entire thing through the keyboard. You are worth the extra work, so "why not?"

Program below, also through keyboard and Epson (for Chet).

```
15 PRINT
20 PRINT "(S)QUARE ROOT +"
25 PRINT "(T)RIGONOMETRY FUNCTION"
30 PRINT "(L)OG FUNCTIONS"
35 REM
40 REM
45 REM
50 INPUT M$
55 IF M$="S" THEN GOTO 85
60 IF M$="T" THEN GOTO 210
65 IF M$="L" THEN GOTO 325
70 REM
75 REM
80 REM
85 REM SQUARE ROOT +
90 CLS
95 PRINT "ENTER LOWER (STARTIN
G) POINT FOR ""SQUARE ROOT""."
100 INPUT A
105 PRINT
110 PRINT "ENTER UPPER (STOP) P
OINT."
115 INPUT B
120 REM SCROLL
125 REM PRINT "NO.";TAB 5;"SQUA
RE";TAB 16;"DIFFERENCE"
130 REM SCROLL
135 REM PRINT TAB 5;"ROOT";TAB
16;"FIGURE"
140 FOR X=A TO B
145 LET C=SQR X
150 LET D=(C*C)-X
155 SCROLL
160 PRINT X; TAB 5;C;TAB 16;D
165 LET Q=X/20
170 LET Q1=Q-INTQ
175 IF SGN Q1<>1 THEN SCROLL
180 IF SGN Q1<>1 THEN SCROLL
185 IF SGN Q1<>1 THEN PRINT "NO
ENCE"
190 IF SGN Q1<>1 THEN SCROLL
195 IF SGN Q1<>1 THEN PRINT TAB
5;"ROOT";TAB 16;"FIGURE"
200 NEXT X
205 GOTO 9999
210 REM TRIG CHECKS
215 CLS
220 PRINT "DIGITS FROM 0 TO 360
WILL BE GENERATED, CONVERTED TO
RADIANS, THEN SINE/COSINE LOOKE
D UP, THE ""DIFFERENCE"" COLUMN
IS DERIVED FROM"
225 PRINT
230 PRINT TAB 5;"SIN*SIN+COS*CO
S=1"
235 FOR Q =1 TO 100
240 NEXT Q
```

```
245 SCROLL
250 REM
255 FOR X=0 TO 360
260 LET A=X*PI/180
265 LET B=SIN A
270 LET C=COS A
275 LET D=(B*B+C*C)-1
280 SCROLL
285 PRINT X;TAB 5;B; TAB 16; D
290 LET Q1=S/20
295 LET Q=Q1-INT Q1
300 IF SGN Q<>1 THEN SCROLL
305 IF SGN Q<>1 THEN SCROLL
310 IF SGN Q<>1 THEN PRINT "NO.
";TAB 5;"SIN";TAB 16;"DIFFERENCE
"
315 NEXT X
320 GOTO 9999
325 REM LOGATHYTHMIC FUNCTION.
330 CLS
335 PRINT
340 PRINT "LOG FUNCTIONS ARE DO
NE IN BASE ""E"" (";EXP 1;") WIT
H GOOD ACCURACY."
345 PRINT
350 PRINT "ENTER THE NUMBER FOR
LOG."
355 INPUT L
360 LET LN=LN L
365 LET LD=LN/LN 10
370 PRINT
375 PRINT "LOG ";L;"=";LN
380 PRINT
385 PRINT "LOG(DEC) ";L;"=";LD
390 PRINT
395 PRINT "THE CONVERSION FROM
NATURAL LOGS TO DECIMAL LOGS IS "
400 PRINT
405 PRINT "LOG(DEC)=LOG(NAT)/LO
G(NAT)""10""."
410 GOTO 9999
9985 FAST
9986 LET L=5
9987 LET N=16509
9988 IF PEEK N>38 THEN SLOW
9989 IF PEEK N>38 THEN STOP
9990 POKE N, INT (L/256)
9991 POKE N+1, L-256*INT(L/256)
9993 FOR N=N+4 TO N+3+PEEK (N+2)
+256+PEEK(N+3)
9994 IF PEEK N=236 OR PEEK N=237
 THEN PRINT L;"->";CHR$ PEEK N
9995 NEXT N
9996 LET L=L+5
9997 GOTO 9988
9999 STOP
```

TIPS

PROTECTING YOUR PROGRAMS AGAINST LILCO

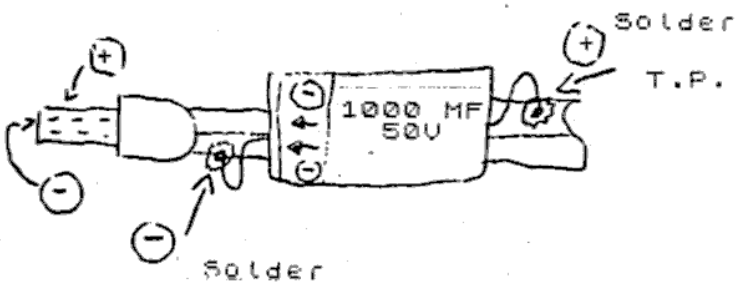
If you live on Long Island, as many of our club members do, then you probably find yourself in the same boat as me.

Our electricity supplied by LILCO is so erratic, I hate to work on programs, because if it is raining, or if it is windy, or if it is sunny, or if it is dark out, or if it is Summer, Winter, Spring, or Fall, the electric can, and often does, blink momentarily causing the computer to crash.

The other day it was raining a little and, of course, the electricity blinked off and on three times in two hours. I got so disgusted, I gaved up on the program I was working to debug. But I didn't give up on computing. I decided to add a big capacitor (1000 mfd 50 v) across the power supply leads hoping this little extra charge could power the computer for a few seconds, if necessary. So far I have only tested this modification by flipping the power (AC) switch on and off rapidly and it did power the computer for this short duration.

Thankfully LILCO has kept the power coming steadily during the time I have been using the computer- for about three days (at time of writing). But I know this is only a false indication that we have reliable power. So the next time LILCO blinks on me, I hope my modification will keep me computing.

The details for this modification, if you choose to try it, are as follows. Add the capacitor, observing the correct polarity, by soldering each capacitor lead to its respective wire. This may be accomplished by stripping a small amount of insulation from each wire about 2.5 inches apart and soldering the leads to each wire.



-Thomas Skapinski

8K of Very Low Power CMOS RAM In a World Class Computer For Only $40

by WILL MOORE

Here is a method for installing a Toshiba TC5565 PL-15 Very Low Power CMOS 8K X 8 RAM ($40 from Microprocessors Unlimited) in a TS1000 computer. Two of the great advantages of installation are the reduced power consumption (maybe as much as a 30% cut) and the absence of RAM pack wobble and crash. Who knows, in a year and a half it may be possible to get a 32K CMOS RAM which will fit in the same spot that you prepare for this RAM. Of course the price may still be a bit high at that point, and such a chip would need additional decoding, but RAM power and energy savings would be great.

Here is how to proceed:

1) Carefully remove the 2K RAM from an Issue 3 TS1000 computer and install a 28 pin socket if there isn't one there already.

2) Cut the 5V trace to what is now pin 2 on the 28 pin socket (see diagram for C2=cut 2). And connect a jumper from A12 to pin 2 (J2= this jumper). When you look at the circuit board you will see that pin 2 of the 28 pin socket is connected to the donut pad that is nearby. My diagram has been made simple so as to avoid confusion. The jumper wires are the thick black lines and the traces to be cut are the thin lines. Other details are connections and parts on the component side of the board.

3) Make 2 cuts (C3 and C3) to disconnect $\overline{WR}$ from what was pin 21 (now pin 23 on the 28 pin socket) and connect a jumper (J3) from A11 to pin 23.

4) Install a jumper (J4) to reconnect $\overline{WR}$ to the edge connector. In case you are in doubt, there are three jumpers and three cuts. Incidentally, the Toshiba chip's power dissipation is 27mW/MHz.